

PATENT COOPERATION TREATY

REC'D 28 FEB 2005
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From the:
INTERNATIONAL SEARCHING AUTHORITY

To:

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PCT

WRITTEN OPINION OF THE INTERNATIONAL SEARCHING AUTHORITY

(PCT Rule 43bis.1)

Applicant's or agent's file reference 12557510		Date of mailing (day/month/year) 23 FEB 2005	
International application No. PCT/AU2005/000037		International filing date (day/month/year) 14 January 2005	
International Patent Classification (IPC) or both national classification and IPC Int. Cl. ⁷ B01F 7/16, B02C 13/14, 19/06, B04B 5/12, C02F 1/38, F26B 11/14, B09B 3/00		Priority date (day/month/year) 16 January 2004	
Applicant ADVANCED GRINDING TECHNOLOGIES PTY LIMITED et al			

1. This opinion contains indications relating to the following items:

<input checked="" type="checkbox"/>	Box No. I	Basis of the opinion
<input type="checkbox"/>	Box No. II	Priority
<input type="checkbox"/>	Box No. III	Non-establishment of opinion with regard to novelty, inventive step and industrial applicability
<input checked="" type="checkbox"/>	Box No. IV	Lack of unity of invention
<input checked="" type="checkbox"/>	Box No. V	Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement
<input checked="" type="checkbox"/>	Box No. VI	Certain documents cited
<input type="checkbox"/>	Box No. VII	Certain defects in the international application
<input checked="" type="checkbox"/>	Box No. VIII	Certain observations on the international application

2. **FURTHER ACTION**

If a demand for international preliminary examination is made, this opinion will be considered to be a written opinion of the International Preliminary Examining Authority ("IPEA") except that this does not apply where the applicant chooses an Authority other than this one to be the IPEA and the chosen IPEA has notified the International Bureau under Rule 66.1bis(b) that written opinions of this International Searching Authority will not be so considered.

If this opinion is, as provided above, considered to be a written opinion of the IPEA, the applicant is invited to submit to the IPEA a written reply together, where appropriate, with amendments, before the expiration of 3 months from the date of mailing of Form PCT/ISA/220 or before the expiration of 22 months from the priority date, whichever expires later.

For further options, see Form PCT/ISA/220.

3. For further details, see notes to Form PCT/ISA/220.

Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer JONATHAN LEWIS Telephone No. (02) 6283 2063
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Box No. I - Basis of the opinion

1. With regard to the language, this opinion has been established on the basis of the international application in the language in which it was filed, unless otherwise indicated under this item.
☐ This opinion has been established on the basis of a translation from the original language into the following language , which is the language of a translation furnished for the purposes of international search (under Rules 12.3 and 23.1(b)).
2. With regard to any nucleotide and/or amino acid sequence disclosed in the international application and necessary to the claimed invention, this opinion has been established on the basis of:
 - a. type of material
☐ a sequence listing
☐ table(s) related to the sequence listing
 - b. format of material
☐ in written format
☐ in computer readable form
 - c. time of filing/furnishing
☐ contained in the international application as filed.
☐ filed together with the international application in computer readable form.
☐ furnished subsequently to this Authority for the purposes of search.
3. ☐ In addition, in the case that more than one version or copy of a sequence listing and/or table relating thereto has been filed or furnished, the required statements that the information in the subsequent or additional copies is identical to that in the application as filed or does not go beyond the application as filed, as appropriate, were furnished.
4. Additional comments:

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Box No. IV Lack of unity of invention

1. ☐ In response to the invitation (Form PCT/ISA/206) to pay additional fees the applicant has:
- ☐ paid additional fees
- ☐ paid additional fees under protest
- ☐ not paid additional fees
2. ☒ This Authority found that the requirement of unity of invention is not complied with and chose not to invite the applicant to pay additional fees.
3. This Authority considers that the requirement of unity of invention in accordance with Rule 13.1, 13.2 and 13.3 is
- ☐ complied with
- ☒ not complied with for the following reasons:

The international application does not comply with the requirements of unity of invention because it does not relate to one invention or a group of inventions linked so as to form a single general inventive concept. In coming to this conclusion the International Searching Authority has found that there are different inventions as follows:

1. Claims 1-45 and 47-49. These claims disclose a feed material processing apparatus comprising a chamber, an inlet at the upper region of the chamber, a rotor rotatable about a substantially vertical axis, prompting a circulatory flow of feed material and/or gas, and an outlet in the lower region of the chamber. It is considered that a feed material processing apparatus with these features constitutes a first "special technical feature".

2. Claim 46 and 63-65. This claim discloses a milling apparatus comprising a chamber, an inlet at the upper region of the chamber, a rotor rotatable about a substantially vertical axis, prompting a circulatory flow of feed material and/or gas, and an outlet in the lower region of the chamber. It is considered that a milling apparatus constitutes a second "special technical feature".

3. Claims 50-56. These claims disclose a method for producing a powdered, granulated and/or dried food comprising introducing a feed material to a device comprising a chamber, an inlet at the upper region of the chamber, a rotor rotatable about a substantially vertical axis, prompting a circulatory flow of feed material and/or gas, and an outlet in the lower region of the chamber. It is considered that producing a powdered, granulated and/or dried food constitutes a third "special technical feature".

4. Claims 57-59. These claims disclose a method for processing a waste material comprising introducing waste material to a device comprising a chamber, an inlet at the upper region of the chamber, a rotor rotatable about a substantially vertical axis, prompting a circulatory flow of feed material and/or gas, and an outlet in the lower region of the chamber.

Continued on supplemental sheet

4. Consequently, this opinion has been established in respect of the following parts of the international application:

- ☒ all parts
- ☐ the parts relating to claims Nos.

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Box No. V Reasoned statement under Rule 43bis.1(a)(i) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement

1. Statement

Novelty (N)	Claims	YES
	Claims 1-65	NO
Inventive step (IS)	Claims	YES
	Claims 1-65	NO
Industrial applicability (IA)	Claims 1-65	YES
	Claims	NO

2. Citations and explanations:

D1: Derwent Abstract Accession No. 98-540702/46, RU 2108160 C1	D11: DE 20215158
D2: DE 3002429	D12: EP 1273341
D3: AU 19540/00	D13: EP 1208905
D4: AU 15002/97	D14: US 5538342
D5: DE 3916258	D15: Patent Abstracts of Japan, JP 2002-035562
D6: Patent Abstracts of Japan, JP 09-066243	D16: Patent Abstracts of Japan, JP 2002-059144
D7: US 4650343	D17: Patent Abstracts of Japan, JP 2002-282723
D8: US 4799595	D18: Patent Abstracts of Japan, JP 2003-093909
D9: US 2003/0197080	D19: Derwent Abstract Accession No. 2003-595298/56
D10: US 2002/0064086	D20: Derwent Abstract Accession No. 97-200542/18

Novelty and Inventive Step (Claims 1-65)

Documents D1-D20 disclose various examples of processing apparatus, all of which feature a chamber, and inlet, an outlet and a rotor rotated about a vertical axis. The apparatus of documents D1-D20 are used for a wide variety of purposes, such as milling or grinding, mixing, blending, separation, drying and sterilisation. As a result, Claims 1-65 lack novelty and inventive step in light of documents D1-D20. It should also be noted that the cited documents are by no means an exhaustive list of potential citations, but are merely a selection of the many relevant prior art documents.

Industrial Applicability (Claims 1-65)

The current claims are directed towards a processing apparatus and therefore have industrial applicability.

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Box No. VI Certain documents cited

1. Certain published documents (Rules 43bis.1 and 70.10)

<u>Application No. Patent No.</u>	<u>Publication date (day/month/year)</u>	<u>Filing date (day/month/year)</u>	<u>Priority date (valid claim) (day/month/year)</u>
WO 2004/067468	12 August 2004	26 January 2004	29 January 2003
US 2004/0218464	4 November 2004	2 May 2003	2 May 2003
WO 2004/041442	21 May 2004	24 October 2003	4 November 2002
DE 10308500	23 September 2004	26 February 2003	26 February 2003
WO 2004/091797	28 October 2004	16 April 2004	17 April 2003

These documents disclose all the essential features of Claims 1-65.

2. Non-written disclosures (Rules 43bis.1 and 70.9)

<u>Kind of non-written disclosure</u>	<u>Date of non-written disclosure (day/month/year)</u>	<u>Date of written disclosure referring to non-written disclosure (day/month/year)</u>

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Box No. VIII Certain observations on the international application

The following observations on the clarity of the claims, description, and drawings or on the question whether the claims are fully supported by the description, are made:

1. Due to the very broad scope of the independent claims of this application the search was restricted for economic reasons. Claim 1, for instance, merely defines a processing apparatus comprising a chamber, an inlet and outlet and a rotor that is rotatable about a substantially vertical axis by a rotation drive. The search produced a very large number of potential citations across a wide range of different art, so it was necessary to restrict the search. As a result, the documents cited in the International Search Report merely represent a selection of relevant art, and should by no means be considered an exhaustive list of potential citations.

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Supplemental Box

In case the space in any of the preceding boxes is not sufficient.

Continuation of: Box IV

It is considered that processing a waste material constitutes a fourth "special technical feature".

5. Claims 60-62. These claims disclose a method of water purification comprising introducing water to a device comprising a chamber, an inlet at the upper region of the chamber, a rotor rotatable about a substantially vertical axis, prompting a circulatory flow of feed material and/or gas, and an outlet in the lower region of the chamber. It is considered that a water purification method constitutes a fifth "special technical feature".

These groups are not so linked as to form a single inventive concept, that is, they do not have any common inventive features, which define a contribution over the prior art. The common concept linking these groups of claims is the features of a chamber, an inlet at the upper region of the chamber, a rotor rotatable about a substantially vertical axis, prompting a circulatory flow of feed material and/or gas, and an outlet in the lower region of the chamber. However, this concept is not novel in the light of the following references:

1. Perry, R.H. and Green, D.W. Perry's Chemical Engineers' Handbook, 7th Edition, McGraw-Hill, 1997. See Figure 7-4 (f), Page 7-16.
2. Perry, R.H. and Green, D.W. Perry's Chemical Engineers' Handbook, 7th Edition, McGraw-Hill, 1997. See Figure 18-72, Page 18-51.
3. Perry, R.H. and Green, D.W. Perry's Chemical Engineers' Handbook, 7th Edition, McGraw-Hill, 1997. See Figure 18-109, Page 18-90.
4. McCabe, W.L. et al. Unit Operations of Chemical Engineering, 5th Edition, McGraw-Hill, 1993. See Figure 9.1, Page 236.
5. McCabe, W.L. et al. Unit Operations of Chemical Engineering, 5th Edition, McGraw-Hill, 1993. See Figure 30.11, Page 1012.
6. Degremont, S.A. Water Treatment Handbook, Stephen Austin and Sons, 1973. See Figure 77, Page 131.
7. Coulson, J.M. and Richardson, J.F. Chemical Engineering Volume Two, 2nd Edition, Pergamon, 1976. See Figure 16.18, Page 658.

Consequently the common features do not constitute a "special technical feature" within the meaning of PCT Rule 13.2, second sentence, since they make no contribution over the prior art. Since there exists no other common feature which can be considered as a special technical feature within the meaning of PCT Rule 13.2, second sentence, no technical relationship within the meaning of PCT Rule 13 between the different inventions can be seen. Therefore, a posteriori, the claims do not satisfy the requirement of unity of invention.